AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer-implemented method for ~~In system for maintaining a plurality of assemblies including a plurality of replaceable components, the system having a computer with software for implementing a method of~~ determining a time interval at which unscheduled demand for the components is expected to occur, ~~the method~~ comprising:

computing a plurality of statistical models for a probability of unscheduled component demand as a function of time and a failure rate of a component, wherein each of the plurality of computed statistical models includes a distinct linear combination of variables pertaining to component use, and wherein each of the computed statistical models comprises an N-erlang distribution wherein the N-erlang distribution includes a parameter λ;

for each component, collecting historical unscheduled component demand data;

for each component, using the collected historical unscheduled component demand data to select one computed statistical model from the plurality of computed statistical models, wherein the selected computed statistical model most closely matches the historical unscheduled component demand data, and wherein the step of selecting one of the computed statistical models includes selecting an equation for the parameter λ;

for each component, selecting an allowable probability of underestimating an average failure rate, α; and

using the selected computed statistical model to calculate a time interval at which the unscheduled component demand is expected to occur.

2. (Previously Presented) The method of claim 1, wherein using the selected computed statistical model comprises calculating a time interval when a probability of a next unscheduled component demand event equals the probability that the unscheduled component demand will not exceed the allowable probability $(1-\alpha)$.

3. (Canceled)

4. (Canceled)

5. (Previously Presented) The method of claim 1, further comprising eliminating insignificant variables and variables that cause multicollinearity from each of the computed statistical models using the historical unscheduled component data.

6. (Canceled)

7. (Currently Amended) A computer-implemented method ~~software encoded with a program~~ for forecasting unscheduled demand for a plurality of different components, comprising ~~the program when executed performing~~ the steps of:

computing a plurality of statistical models for modeling unscheduled demand for the components as a function of a failure rate of each of the components, wherein each of the plurality of computed statistical models includes a distinct linear combination of variables pertaining to component use, and wherein each of the computed statistical models comprises an N-erlang distribution wherein the N-erlang distribution includes a parameter λ;

for each component, collecting historical unscheduled component demand data;

for each component, selecting one of the computed statistical models of the plurality of computed statistical models for a probability of unscheduled component demand, wherein the selected computed statistical model most closely matches the historical unscheduled demand data corresponding to the component, and wherein the step of selecting one of the computed statistical models includes selecting an equation for the parameter λ; and

for each component, determining a date at which a cumulative probability of unscheduled component demand reaches a predetermined threshold.

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Previously Presented) The method of claim 1, wherein the failure rate of the component is a function of temperature.

13. (Previously Presented) The method of claim 1, wherein the failure rate of the component is a function of hours of operation.

14. (Previously Presented) The method of claim 1, wherein the failure rate of the component is a function of flight cycles.

15. (Canceled)

16. (Canceled)